

**Bhoj Reddy Engineering College for Women: Hyderabad**  
**Faculty of Mathematics**  
**Lesson plan of faculty member for the academic year 2019–20**

Class: I B Tech  
 Subject: Mathematics-II

Branch - Section:IT-A

Semester: II  
 Lectures per week: 3+1 Tutorial

Lecture Number	Topics to be covered	Date (s)
<b>UNIT-I: First Order ODE</b>		
1	<b>Tutorial:</b> Introduction of Differential equations	16 January 2020
2	Exact Differential equations	17 January 2020
3	Problems on Exact Differential equations	18 January 2020
4	Non exact differential equations reducible to exact differential equations	22 January 2020
5	<b>Tutorial:</b> Examples of non exact differential equations reducible to exact differential equations	23 January 2020
6	Linear Differential equations and examples	24 January 2020
7	Non Linear Differential equations, Bernoulli's equations and examples	25 January 2020
8	Equations not of first degree and examples	29 January 2020
9	<b>Tutorial:</b> Examples of Bernoulli's equations	30 January 2020
10	Equations solvable for p, equations solvable for y and examples	31 January 2020
11	Equations solvable for x and Clairaut's type and examples	1 February 2020
<b>UNIT-II: Ordinary Differential Equations of Higher Order</b>		
12	Linear Differential equations of second and higher order with constant coefficients	5 February 2020
13	<b>Tutorial:</b> Examples of Homogeneous linear differential equations	6 February 2020
14	Examples of the type $f(x) = e^{ax} \cdot \sin ax, \cos ax$	7 February 2020
15	Examples of the type $f(x) = x^n \cdot e^{ax} V(x)$	8 February 2020
16	Examples of $f(x) = x^n V(x)$	12 February 2020
17	<b>Tutorial:</b> Examples of Non Homogeneous linear differential equations	13 February 2020
18	Methods of variation of parameters and examples	14 February 2020
19	Equations reducible to linear ODE with constant coefficients :Legendre's equations and examples	15 February 2020
20	Cauchy-Euler equations and examples	19 February 2020
21	<b>Tutorial:</b> Examples of Methods of variation of parameters	20 February 2020
<b>UNIT-III: Multivariable Calculus(Integration)</b>		
22	Evaluation of Double integrals in Cartesian and Polar coordinates and examples	22 February 2020
23	Change of order of integration and examples	26 February 2020
24	<b>Tutorial:</b> Change of variables (polar) and examples	27 February 2020
25	Examples of Double Integrals	28 February 2020
26	Evaluation of Triple integrals and examples	29 February 2020
27	Evaluation of Triple integrals when the volume given	11 March 2020

28	<b>Tutorial:</b> Change of variables into polar form (cylindrical & spherical) and examples	12 March 2020
29	Change of variables and its problems	13 March 2020
30	Revision and Objective Question Bank	14 March 2020
31	Finding areas by double integrals and its problems	18 March 2020
32	<b>Tutorial:</b> Finding volumes using triple integrals and examples	19 March 2020
33	Finding Center of Mass and Gravity by double and triple integrals	20 March 2020
34	Examples of Center of Mass and Gravity by double and triple integrals	21 March 2020
<b>UNIT-IV: Vector Differentiation</b>		
35	<b>Tutorial:</b> Scalar point function, Vector point function, Gradient of a Scalar point function and examples	26 March 2020
36	Directional derivative, Unit vector normal and examples	27 March 2020
37	Divergence of a Vector point function and problems	28 March 2020
38	Examples of Gradient and Divergence	1 April 2020
39	Curl of a Vector point function and examples	3 April 2020
40	Vector Identities (repeated application of $\nabla$ )	4 April 2020
41	Examples of Solenoidal and Irrotational vectors	8 April 2020
42	<b>Tutorial:</b> Vector Identities product of two point functions	9 April 2020
43	Scalar Potential Function and examples	11 April 2020
<b>UNIT-V: Vector Integration</b>		
44	Line integrals, examples of Line integrals	15 April 2020
45	<b>Tutorial:</b> Examples of Scalar Potential Function, Total Work done by Line integral	16 April 2020
46	Surface Integrals, examples of Surface Integrals	17 April 2020
47	Volume Integrals, examples of Volume Integrals	18 April 2020
48	Examples of Line, Surface and Volume Integrals	22 April 2020
49	<b>Tutorial:</b> Green's theorem and examples	23 April 2020
50	Gauss Divergence theorem and examples	24 April 2020
51	Stokes theorem and examples	25 April 2020
52	Examples of Green's and Gauss Divergence theorems	29 April 2020
53	<b>Tutorial:</b> Problems on Stokes theorem	30 April 2020
54	Problems on Stokes theorem	1 May 2020

**Text Books:** 1. Higher Engineering Mathematics by Dr.B.S.Grewal by Khanna Publishers  
2. Advanced Engineering Mathematics by Erwin Kreyszig, John Wiley & Sons  
3. Engineering Mathematics by B V Ramana

Name and signature of the faculty: T Suresh

Name and signature of Head of Mathematics Faculty: K Padma

